



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,182	02/28/2002	Junji Nakanishi	2185-0623P-SP	4912

2292 7590 08/13/2003

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

THORNTON, YVETTE C

ART UNIT	PAPER NUMBER
----------	--------------

1752

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/084,182

Applicant(s)

NAKANISHI ET AL.

Examiner

Yvette C. Thornton

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

This is written in reference to application number 10/084182 filed on February 28, 2002 and published as US 20020164540 on November 7, 2002.

Information Disclosure Statement

1. The Information Disclosure Statement filed on July 26, 2002 has been entered and fully considered.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

3. Claims 8 and 9 are objected to because of the following informalities: the claims as written refer to component (C). The examiner believes that claims pertain to component (D) (spec. pg. 2-3). Appropriate correction is required.
4. The following rejections are based on the examiner's interpretation of the claims in light of the specification.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1, 5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Padmanaban et al. (US 5846690 A). Padmanaban exemplifies in example 11 a positive

Art Unit: 1752

working resist composition comprising poly(4-hydroxystyrene-co-3-t-butyloxycarbonyloxy-styrene) resin; the photoacid generator α,α -bis(p-chlorophenyl)diazomethane; a base compound of acetic acid-triphenyl sulfonium in PGMEA solution and a polyvalent carboxylic acid ester of bis(2-hydroxyethyl) terephthalate (c. 12, l. 55-c. 13, l. 11). See also example 3 and claims 10-14.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-6 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barclay et al. (US 6492086 B1) in view of Nakamura (JP 02-115852, abstract). Barclay exemplifies in example 8, a positive working composition comprising (A) a copolymer of p-hydroxystyrene and 2-methyladamantylmethacrylate, (B) a photoacid generator di-t-butyl phenyl iodonium camphorsulfonate, (C) a base tetrabutyl ammonium lactate and (D) a surfactant (c. 19, l. 1-c. 20, l. 36). Although not exemplified, Barclay teaches that the taught photoresist composition may further contain other additives such as plasticizers, speed enhancers and anti-striation agents. Barclay fails to provide specific examples of suitable plasticizers. One of ordinary skill in the art would have been motivated to use any plasticizer which is well-known and conventional in the art of positive type resist materials.

Nakamura discloses that adding a plasticizer to a positive type resist material enhances sensitivity. Suitable examples include di-2-ethyl hexyl adipate, di-2-ethyl hexyl sebecate and ditridecyl phthalate. It would have been obvious to one of ordinary skill in the art to use di-2-ethyl hexyl adipate, di-2-ethyl hexyl sebecate or ditridecyl phthalate as the taught plasticizers of Barclay in order to enhance sensitivity as they are well known in the art.

See also Padmanaban et al. US 5846690 A c. 5, l. 47-c. 6, l. 23 for examples of conventional plasticizers

9. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oomori et al. (US 2002/0034704 A1) in view of Nakamura (JP 02-115852, abstract). Oomori exemplified in example 4 a positive working photoresist composition comprising (1) a copolymeric resin, (2) 3 parts of diphenyliodonium trifluoromethane sulfonate (onium acid generator), (3) 0.16 parts of triethanolamine (organic base), (4) 0.16 parts of phenyl phosphonic acid and (5) 0.1 part of a fluorosilicone based surface active agent. The said copolymeric resin consists of hydroxystyrene, styrene, 2-methyladamantyl methacrylate and 2,5-dimethyl-2,5-hexanediol diacrylate (p. 0067-0068, 0080-0081). Although not exemplified, Oomori teaches that the taught photoresist composition may further contain other additives such as plasticizers, stabilizers and surface active agents (p. 0054). Oomori fails to provide specific examples of suitable plasticizers. One of ordinary skill in the art would have been motivated to use any plasticizer which is well-known and conventional in the art of positive type resist materials.

Nakamura discloses that adding a plasticizer to a positive type resist material enhances sensitivity. Suitable examples include di-2-ethyl hexyl adipate, di-2-ethyl hexyl

Art Unit: 1752

sebecate and ditiidecyl phthalate. It would have been obvious to one of ordinary skill in the art to use di-2-ethyl hexyl adipate, di-2-ethyl hexyl sebecate or ditiidecyl phthalate as the taught plasticizers of Oomori in order to enhance sensitivity as they are well known in the art.

See also Padmanaban et al. US 5846690 A c. 5, l. 47-c. 6, l. 23 for examples of conventional plasticizers.

10. The examiner was unable to obtain a machine translation of the entire Nakamura reference, discussed above. The said reference has submitted to the USPTO Translation Branch for an official translation.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

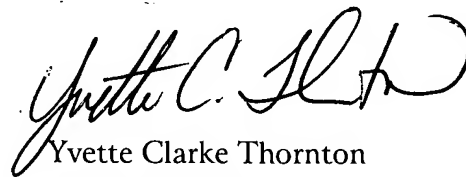
- Itani et al. (2001-027809, machine translation) pertaining to chemical amplification series positive type resists.
- Kawamura et al. (US 4772534 A) pertaining to light sensitive composition containing a light sensitive s-triazine compound.
- Sondergeld (US 5952151 A) pertaining to photopolymerizable mixture exhibiting low oxygen sensitivity for the production of color proofs (see c. 4, l. 6-9).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvette C. Thornton whose telephone number is 703-305-0589. The examiner can normally be reached on Monday-Thursday 8-6:30.

Art Unit: 1752

13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet C. Baxter can be reached on 703-308-2303. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

14. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1495.



Yvette Clarke Thornton
Junior Examiner
Art Unit 1752

yct
August 8, 2003